

ABDURRHAMAN CHAHROUR

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Backend & Systems Engineering — Financial Systems, Distributed Backends

EDUCATION

- **1337 Coding School (UM6P Benguerir)** Benguerir, Morocco
Computer Science Program — Level: 14.09 August 2023 – January 2026
- **FSAC - Faculté des Sciences Aïn Chock** Casablanca, Morocco
Bachelor in Applied Computer Science August 2023 – January 2026

TECHNICAL SKILLS

- **Languages:** Python, TypeScript, Java, C++, C
- **Backend:** Node.js, Spring Boot, Micronaut, RESTful APIs, Microservices, WebSockets
- **Databases:** PostgreSQL, MongoDB, Prisma ORM, SQLite
- **DevOps:** Docker, Docker Compose, Jenkins, Git, GitHub, Maven, CI/CD
- **Security:** JWT, OAuth 2.0, Two-Factor Authentication (2FA)

EXPERIENCE

- **HPS — SWAM Department (Switch Al Maghrib)** Casablanca, Morocco
PFE Internship — Software Engineering (Full-Time) February 2026 – Present
 - **Financial Reconciliation Automation:** Designing and implementing an automation solution to replace manual financial reconciliation processes within a critical operational workflow.
 - **Process Optimization:** Improving reliability, traceability, and efficiency of financial control operations involving sensitive transaction data.
 - **System Reliability:** Enhancing accuracy and reducing operational risk by minimizing human intervention in high-volume financial procedures.

TECHNICAL EXPERIENCE

- **Predictive Maintenance System — OCP**
Python — PyTorch — FastAPI
 - **Predictive Modeling:** Developed a predictive maintenance system to detect industrial failures 24 hours in advance using time-series sensor data.
 - **Deep Learning:** Trained and optimized an LSTM model with feature engineering for industrial anomaly detection.
 - **Backend Deployment:** Served real-time predictions through a FastAPI backend powering a monitoring dashboard.
- **Nexus — Real-time Gaming Backend**
Node.js — TypeScript — Fastify — Socket.IO
 - **Real-time Architecture:** Built a scalable multiplayer backend using Fastify, TypeScript, and Socket.IO.
 - **Security:** Implemented OAuth2, JWT, 2FA, and bcrypt-based authentication mechanisms.
 - **Infrastructure:** Designed scalable architecture using Prisma ORM, SQLite, and Docker containerization.
- **CraftHTTP — Custom Web Server**
C++ — System Programming
 - **HTTP Server Implementation:** Built an HTTP/1.1 web server in C++ using non-blocking sockets and an epoll event loop.
 - **CGI & Routing:** Implemented CGI support for PHP/Python/Ruby, virtual hosts, and RESTful endpoints.
 - **Configuration Engine:** Developed a YAML configuration parser and custom error handling system.
- **C Compiler (C89 → LLVM IR)**
C — LLVM — Compiler Design
 - **Front-end Implementation:** Currently designing and implementing a C89 compiler front-end targeting LLVM IR (i386 architecture).
 - **Compilation Pipeline:** Building lexical analysis, parsing, AST generation, semantic analysis, and intermediate representation emission.
 - **Toolchain Integration:** Developing a compiler driver orchestrating preprocessing, LLVM lowering, assembly generation, and ELF linking.

CERTIFICATIONS

- **42 / 1337 Curriculum:** Advanced C/C++ programming, system programming, networking, memory management, and UNIX internals.
- **Self-Directed Backend Engineering:** Advanced work in REST APIs, authentication systems (JWT, OAuth2, 2FA), Docker containerization, and scalable backend architecture.